

## CLAIMS

1. A filter cartridge comprising a fiber membrane material obtained by introducing ion exchange groups and/or chelate groups into an organic polymer fiber membrane base material having an average fiber diameter of 0.1  $\mu\text{m}$  to 20  $\mu\text{m}$  and an average pore size of 1  $\mu\text{m}$  to 20  $\mu\text{m}$ .
2. The filter cartridge of claim 1, wherein a polymer side chain having ion exchange groups and/or chelate groups is introduced on the main chain of the organic polymer fiber membrane base material by a radiation graft polymerization method.
3. The filter cartridge of claim 1 or claim 2, wherein the fiber base material is a woven fabric or a non-woven fabric.
4. The filter cartridge of any one of claims 1 to 3, wherein the ion exchange group is selected from a sulfonic acid group, a phosphoric acid group, a carboxyl group, a quaternary ammonium group, and a primary, secondary or tertiary lower amino group, and the chelate group is selected from an iminodiethanol group, an iminodiacetic acid group, a dithiocarbamic acid group and a thiourea group.
5. A filter cartridge comprising a fiber membrane material obtained by introducing ion exchange groups and/or chelate groups into an organic polymer fiber membrane base material, and a micro porous membrane material.
6. A filter cartridge comprising a fiber membrane material obtained by introducing ion exchange groups and/or chelate groups into an organic polymer fiber membrane base material, and a micro porous membrane material obtained by introducing hydrophilic groups into an organic porous membrane base material.
7. The filter cartridge of claim 5 or claim 6, wherein a polymer side chain having ion exchange groups and/or chelate groups is introduced on the main chain of the organic polymer fiber membrane base material by the radiation graft polymerization method.
8. The filter cartridge of any one of claims 5 to 7, wherein the fiber base material is a woven fabric or a non-woven fabric.

9. The filter cartridge of any one of claims 5 to 8, wherein the organic polymer fiber membrane base material has an average fiber diameter of 0.1  $\mu\text{m}$  to 50  $\mu\text{m}$  and an average pore size of 0.1  $\mu\text{m}$  to 100  $\mu\text{m}$ .
- 5 10. The filter cartridge of claim 9, wherein the organic polymer fiber membrane base material has an average fiber diameter of 0.1  $\mu\text{m}$  to 20  $\mu\text{m}$  and an average pore size of 1  $\mu\text{m}$  to 20  $\mu\text{m}$ .
- 10 11. The filter cartridge of any one of claims 5 to 8, wherein the ion exchange group is a cation exchange group selected from a sulfonic acid group, a phosphoric acid group and a carboxyl group or an anion exchange group selected from a quaternary ammonium group and a primary, secondary or tertiary lower amino group, and the chelate group is selected from an iminodiethanol group, an iminodiacetic acid group, a dithiocarbamic acid group and a thiourea group, and
- 15 the hydrophilic group is an ionic hydrophilic group selected from a sulfonic acid group, a phosphoric acid group, a carboxyl group, a quaternary ammonium group, a tertiary amino group, a secondary amino group and a primary amino group or a nonionic hydrophilic group selected from an amide group and a hydroxyl group.
- 20 12. The filter cartridge of any one of claims 5 to 10, wherein the average pore size of the micro porous membrane is 0.02  $\mu\text{m}$  to 1.0  $\mu\text{m}$ .
13. The filter cartridge of claim 12, wherein the average pore size of the micro porous membrane is 0.02  $\mu\text{m}$  to 0.5  $\mu\text{m}$ .
- 25 14. A system for feeding water or a chemical to a microelectronics device fabrication process characterized in that a filter cartridge of any one of claims 1 to 13 is incorporated into a water or chemical feed line to the microelectronics device fabrication process.